

U.S. Patent Application Serial No. 10/004,803
Amendment dated August 5, 2003
Reply to Office Action of May 7, 2003

REMARKS

Applicant has amended the drawings as requested by the Examiner and also made an amendment to FIG. 2B.

With respect to the objection to reference character 6 being used doubly, the specification has been amended to remove typographical errors which should remove that rejection.

A new Abstract is provided.

A description of Figures 4A and 4B has been added to page 5.

It is believed that the present amendments will remove all rejections based on the drawings and specification.

Claim 1 has been amended to remove the rejection based on the claim language. Reconsideration and removal of the rejection of Applicant's claims as anticipated under 35 U.S.C. §102(b) by EP 997959 and as obvious under 35 U.S.C. §103(a) in view of a combination of EP 997959 and EP 1035611 are respectfully requested in view of the following remarks.

The Office Action alleges that EP '959 shows a unit cell of a wound assembly of positive and negative electrodes, with a solid electrolyte or gel-like electrolyte, which the Office Action equates as a separator, between a layer of an active material of a positive electrode and a layer of an active material of a negative electrode. The negative terminal has a layer of an active material and the positive terminal has a layer of active material, with the active material layers alleged to be formed on the surfaces of the curved positions of the outermost periphery of each positive and negative electrode.

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The Office Action then alleges that the active material layers are on the surfaces of the electrode curved portions and removed only at the current collector site when the terminal leads are mounted (page 4, lines 48-57).

The present claimed invention relates to a sealed battery. In a sealed battery, capacity density of the battery must be high.

As described on page 3, lines 8-12 of the present specification, where there is no counter-electrode on the outermost periphery and the battery active material is not utilized for battery reaction, it has been practiced that a portion where the active material is not coated is provided, and the percentage of the battery active material used for battery reaction is increased.

However, as described on page 3, lines 13-20 of the present specification, when there is a portion where the battery active material is not coated, a problem may arise such as short-circuiting due to a shock when the battery is dropped.

In particular, in case of a lithium battery now used in practical application, no active material layer is formed on the outermost periphery, which is not used in battery reaction, and also the negative electrode is designed to be bigger than the positive electrode in order to prevent the deposition of lithium caused by a concentration of an electric current at the end portion. Therefore, it has been unavoidable that a problem such as short-circuiting due to the shock on the dropping of the battery may occur when a graded step is formed on the outermost periphery.

In this respect, the present invention aims to solve the problems in a seal battery - in particular, in a thin type battery now used in practical application.

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As shown in Fig. 1 and described on pages 9-10, the active material layer is formed on the curved surface of the outermost periphery, and the problem such as short-circuiting due to the shock at the dropping of the battery can be solved.

In the present Office Action, each of the cited references describes a battery with the same arrangement as that of the present invention, but each reference discloses an invention relating to a takeoff portion of a tab for an electrical connection. None of the references describe the solution of the problem such as short-circuiting caused by the dropping of the battery.

Also, none of the references gives a concrete description of a method for forming a battery active material, which is essential for the increase of the capacity density of the battery required in a battery for practical use.

Therefore, it is believed that the battery claimed in the present invention is not obvious from the disclosures of the references or their combination.

In view of the aforementioned amendments and accompanying remarks, claims 1-6, as amended, are believed to be allowable and in condition for allowance, which action, at an early date, is requested.

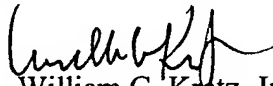
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Replacement Sheet of Drawing (Fig. 2B)
Replacement Sheet of Drawing (Fig. 4A and 4B)
Replacement Abstract

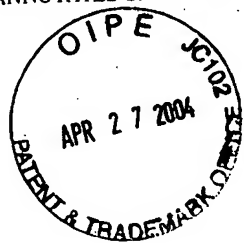


Fig. 2

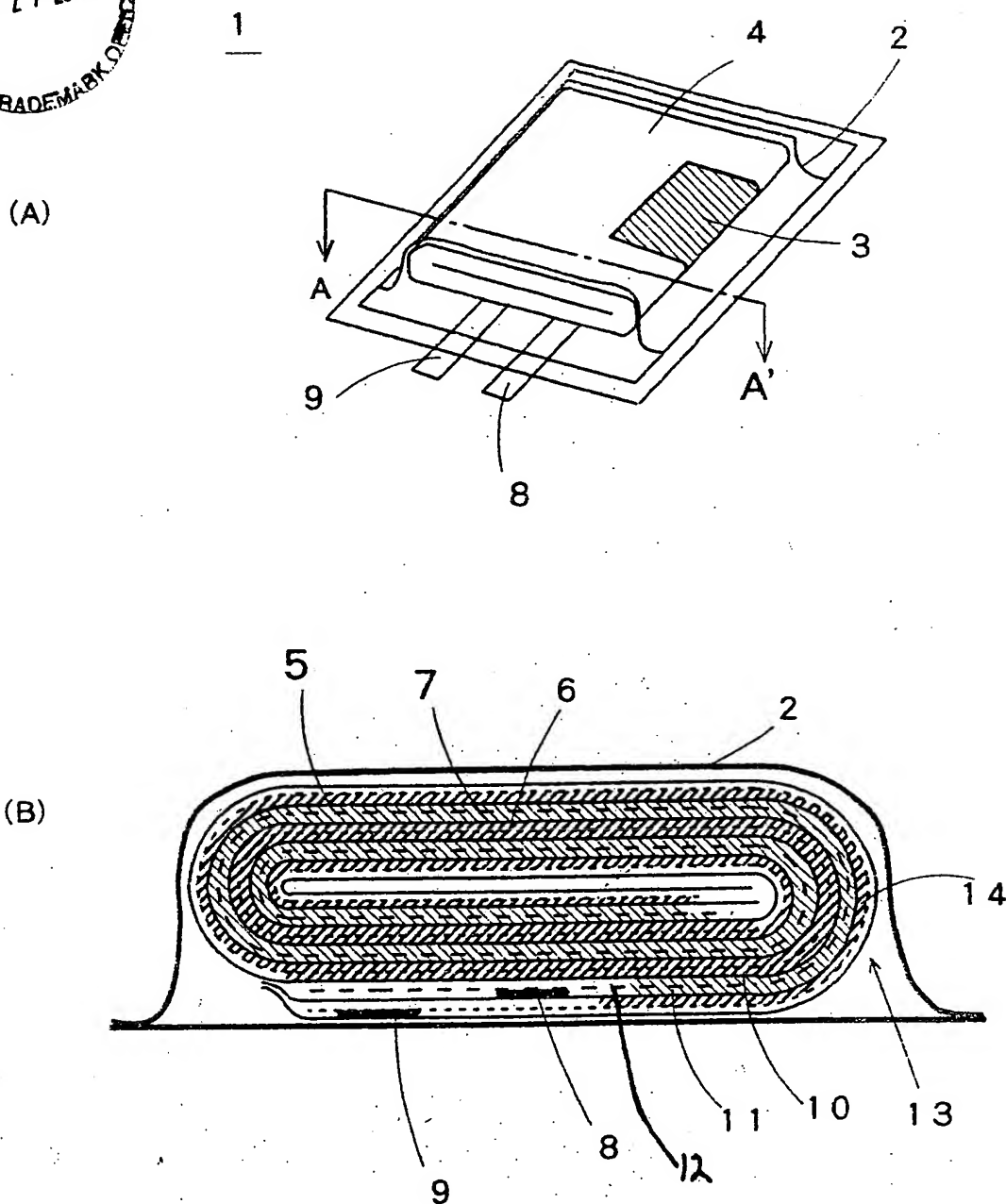
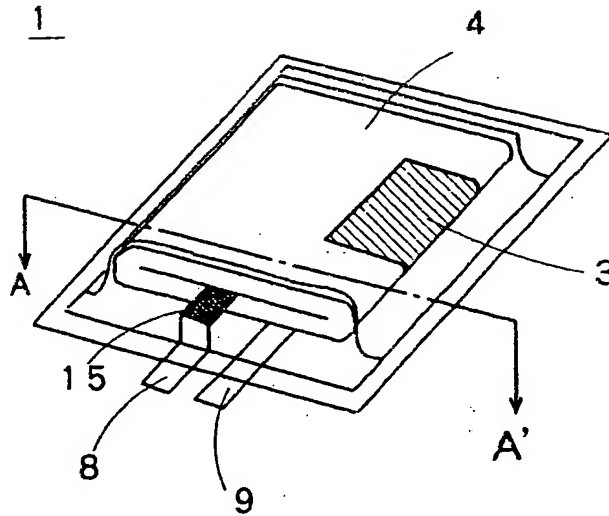




Fig. 4
 PRIOR ART

(A)



(B)

